

**REMARKS****CLAIM REJECTIONS**

In response to the Office Action of August 1, 2007, Applicant amends the claims as noted.

Claims 33, 35, 38, 42, 44-46, 50, 53-61, 64, 65, 70, 71, 74-82, 84, 85, 88, 89, and 91-103 were rejected under 35 USC 103(a) as being unpatentable over Reynaud (5,328,372) in view of Alpert (5,564,929).

Claims 34 and 90 were rejected under 35 USC 103(a) over the same patents and in further view of Kwiatkowski (4,936,776 for a translucent post).

Claim 39 was rejected under 35 USC 103(a) as being unpatentable over Reynaud (5,328,372) in view of Alpert (5,564,929) and in further view of Al Kasem (5,326,264 for an opaque filler material).

Claims 40 and 52 were rejected over 35 USC 103(a) as being unpatentable over Reynaud (5,328,372) in view of Alpert (5,564,929) and in further view of Weissman (5,326,263 for a rounded light-directed end of a post).

Claims 72-73 were rejected over 35 USC 103(a) as being unpatentable over Reynaud (5,328,372) in view of Alpert (5,564,929) and Al Kasem (5,326,264 in further view Fujisawa (4,931,096 for use of a radio opaque material).

Claim 104 was rejected over 35 USC 103(a) as being unpatentable over Reynaud (5,328,372) in view of Alpert (5,564,929) and in further view of Nordin (5,282,747 for a core spacer).

Claims 33, 35, 38, 42, 44-46, 50, 53-61, 64, 65, 70, 71, 74, 77, 95, and 97-99 were rejected over 35 USC 103(a) as being unpatentable over Reynaud (5,328,372) in view of Goldberg (4,894,012 for carbon or glass fibers in external non-endodontic dental appliances).

Claim 34 was rejected over 35 USC 103(a) as being unpatentable over Reynaud (5,328,372) in view of Goldberg (4,894,012) and in further view of Kwiatkowski (4,936,776).

Claim 39 was rejected over 35 USC 103(a) as being unpatentable over Reynaud (5,328,372) in view of Goldberg (4,894,012) and in further view of Al Kasem (5,326,264).

Claims 40 and 52 were rejected over 35 USC 103(a) as being unpatentable over Reynaud (5,328,372) in view of Goldberg (4,894,012) and in further view of Weissman (5,326,263).

Claims 72 and 73 were rejected over 35 USC 103(a) as being unpatentable over Reynaud (5,328,372) in view of Alpert (5,564,929) and Al Kasem (5,326,264) in further view of Fujisawa (4,931,096).

Claims 75, 76, 78-82, 84, 85, 88, 89, 91, 96, 100-103 were rejected over 35 USC 103(a) as being unpatentable over Reynaud (5,328,372) in view of Goldberg (4,894,012) and in further view of in re Himmel GB 2214087 (for twisted fibers).

Claims 83, 86 and 87 were rejected over 35 USC 103(a) as being unpatentable over Reynaud (5,328,372) in view of Goldberg (4,894,012) and in further view of Fujisawa (4,931,096).

Claims 90 and 103 were rejected over 35 USC 103(a) as being unpatentable over Reynaud (5,328,372) in view of Goldberg (4,894,012), in re Himmel GB 2214087 and in further view of Kwiatkowski (4,936,776).

Claim 104 was rejected over 35 USC 103(a) as being unpatentable over Reynaud (5,328,372) in view of Goldberg (4,894,012), in re Himmel GB 2214087 and in further view of Nordin (5,282,747).

In the above noted rejections, the Examiner asserted that Reynaud shows a post comprising a bundle of non-metallic and non-woven fibers 5, in a resin 4. The Examiner then admitted that the Reynaud fibers are carbon fibers and therefore not glass fibers as taught by the present invention. With respect to the first basis of rejection, the Examiner then cited the Alpert 5,564,929 reference as disclosing the use of glass fibers. With respect to the Goldberg 4,894,012 reference applied in the second rejection, it was asserted that Goldberg '012 teaches the use of alternative fibers, including carbon or glass for producing dental appliances.

It is also noted that the Examiner notes on pages 2 and 6 of the Office Action that the shape of the post of the subject matter of the present invention is determined by the canal of the tooth. However, as noted in the accompanying 132 Declaration of Applicant Robert Sicurelli, the size of the post is determined by the canal, but the shape is dependent upon the physical properties required for the post.

Also on pages 3, 6 and 7 of the Office Action the Examiner refers to the "art of implant dentistry," as noted in the accompanying 132 Declaration of Applicant Robert Sicurelli, nothing in Applicants' subject matter refers to dental implants. Applicant's subject matter is prefabricated posts for endodontic root canal therapy. An implant is a replacement for a tooth drilled directly into the jaw. Endodontic posts are inserted into the root canal to support a dental crown prosthesis above the post.

#### **AMENDMENT OF CLAIMS**

Independent claims 33, 55, 77, 78 and 101 have been amended to add the following limitations: tooth-force-vectoring as applied to the post being claimed, wherein the described force vectoring comprises dissipation of energy by shifting of stress under excessive tooth force loads, for saving a force-overloaded tooth. The following additional limitations have further been added to the aforesaid independent claims: and further wherein said post has a flexibility approximating the flexibility of a tooth structure; and wherein said post has a modulus of elasticity approximating the modulus of elasticity of a tooth structure.

In regard to the foregoing added claim limitations Applicant respectfully points out that support and antecedent basis for the new claim limitation of tooth-force-vectoring for dissipation of energy by shifting of stress under excessive tooth force loads, for saving a force-overloaded tooth is found in the U. S. Patent No. 5,518,399 (Sicurelli '399) to the inventor herein, and of which the current application claims priority, at the following places within Sicurelli '399: at column 1 lines 58 - 62; column 2, lines 8-11; column 3 lines 63 - 65; column 4 lines 11-

12; column 5 lines 28-31 (*"The flexible, inelastic post reinforcing rod 30 of the present invention also eliminates stress concentrations in the canal wall and dentin due to the apical lateral movement of rigid and elastic posts."* Sicurelli '399, column 5, lines 28-31). Also, support is found at Sicurelli '399, column 5 lines 61-63 (*"The flexibility of these materials is close to the flexibility of the natural tooth and therefore will reduce the flexibility differential of the intact tooth and the inserted post"* Sicurelli '399, column 5 lines 61-63".)

The foregoing also gives antecedent support and explanation for the newly inserted claim limitation and further wherein said post has a flexibility approximating the flexibility of a tooth structure as clearly pointed out as above-quoted at Sicurelli '399, column 5 lines 61-63.

The portion of the new claim limitations stating wherein said post has a modulus of elasticity approximating the modulus of elasticity of a tooth structure is also pointed out as being essentially the same concept as pointed out as above-quoted at Sicurelli '399, column 5 lines 61-63, but stated with a different descriptive formulation.

As noted in the accompanying 132 Declaration of Applicant Robert Sicurelli, the new claim limitation for "force vectoring" simply means that the post of the present invention absorbs a force overload on a tooth where the internal post of the present invention flexes or deforms, as a means of relieving the tooth overload.

#### **DISCUSSION OF PRIOR ART**

With respect to the new claim limitation worded as wherein said post has a modulus of elasticity approximating the modulus of elasticity of a tooth structure is mentioned by Reynaud (5,328,372) at column 1 lines 65-69 and column 2 lines 1-9. As also noted by Applicant Robert Sicurelli, Reynaud correctly points out that the modulus of elasticity of an endodontic peg must approximate the modulus of elasticity of a natural tooth, else dire consequences ensue for a tooth later exposed to a force overload.

However, Reynaud '372 announces that his invention provides a modulus of elasticity measured at an average of 21 GPa which Reynaud '372 claims "... *is close to the transverse modulus of elasticity of the dentine (i.e., natural tooth) which is 18.*" Reynaud '372, column 2, lines 10-12.

But, according to Applicant Robert Sicurelli, the "close" approximation value of 21 of the modulus of elasticity of the endodontic peg of Reynaud '372 is not actually close enough to the value of 18 GPa, which is that of a natural tooth. In the herewith accompanying Declaration of the Inventor pursuant to 37 CFR 132, the inventor clearly says that the value of the modulus of elasticity of the endodontic post of the present invention should be about that of a natural tooth, i.e., a value of about 18 GPa.

Therefore, not only is the value of the modulus of elasticity of the peg of Reynaud '372 too high to be effective for an endodontic post at a value of 21 GPa, but Reynaud '372 also fails to clearly establish how the numerical figure of 21 GPa was arrived at. At column 2 lines 3-10, Reynaud '372 discusses calculations that are indirect and appear to be an estimate based on an indirect calculation, thus throwing into substantial question the accuracy of the actual value of the modulus of elasticity of the peg of Reynaud '372.

According to Applicant, Robert Sicurelli, the present invention recites claims describing a post having a modulus of elasticity approximately that of a natural tooth. If so, taking as accurate the value of 21 GPa of the modulus of elasticity of the Reynaud '372, the post of Reynaud doesn't equate to the value of the modulus of elasticity of a natural tooth dentin because it is nearly 17% in excess of the natural tooth modulus of elasticity value of 18 GPa. Applicant Robert Sicurelli, asserts that this disparity would cause a substantial disparity in the stress performance of a natural tooth as compared with the peg of Reynaud '372 if implanted therein. This is precisely the stress disparity that Reynaud '372 itself teaches should be avoided.

According to the Applicant Robert Sicurelli, having a modulus of elasticity in a dental endodontic post less than that of tooth dentin also puts the post at something closer to pulpal tissue and makes the system more physiological

matching what was there originally; unlike Reynaud's carbon post and metal posts, both of which have modulus of elasticity which are higher than that of tooth dentin.

As further noted by Applicant, Robert Sicurelli, the "transverse modulus of elasticity" discussed in Reynaud also translates into a higher number of modulus of elasticity when measured axially, since it's apparently not calculated using ASTM testing methods, which measure mechanical properties using "vertical pull" on a measuring device, such as an Instron Company testing measurement apparatus. As further noted by Applicant Robert Sicurelli, transverse modulus may incorporate more resin and less fiber into the calculation, than a vertical pull axial measurement noted by Applicants.

It is further noted that the Examiner says that it would be obvious to combine Reynaud's prefabricated post with fiberglass fibers as disclosed in Alpert or Goldberg.

According to Applicant Robert Sicurelli, one skilled in the art of dental endodontics would note equate the fiberglass fibers of *in situ* patient-specific installations of Alpert '929 or Goldberg '012 with the present invention. For example, Alpert '929 is a three-step process, which includes loose, rope-like fibers which are contacted with a stiffening agent and then inserted in the mouth of the patient. Moreover, as noted in Alpert '929 at column 3, lines 62-64, *w(W)hen the rope begins to stiffen, it is shaped by hand or otherwise to fit the contour of the open root canal.*"

The Alpert '929 reference fails to disclose the claimed invention, as recited in the claims now pending in the application. The post of the present invention is claimed as being *prefabricated* and adapted to extend at least from adjacent the coronal end of a tooth canal toward the apical end of that tooth canal. In other words, the endodontic dental reinforcement post of the present invention is insertable, as a complete unit, in a tooth canal. In the Alpert '929 patent there is disclosed a flexible rope-like root canal prosthesis. The cord is inserted into the root canal and is then held in place by the addition of a plastic

material, such as a composite resin. This plastic material 34 is shown in Fig. 8 and is clearly separate from the rope-like root canal prosthesis.

As a distinction, in the subject device, the reinforcing rod 30 is placed in the tooth canal that has been sized to receive it. As discussed at Column 7, starting at line 5 of the parent Sicurelli patent, the reinforcing rod is placed into the root canal, as seen in Fig. 7 or Fig. 8. Those drawing figures show a tight fit of the reinforcing rod 30 or rod 100 into the tooth canal. The reinforcing rod 30 or rod 100 are not thin ropes that are inserted into a much larger diameter tooth canal and which are then held in place with a surrounding injection of a separate plastic material 34. Even if Alpert '929 were available as a reference, which it is not because of its subsequent filing date, it should not be combined with the Reynaud '372 reference to arrive at the claimed *prefabricated* endodontic dental reinforcement recited in the claims of the subject application. Therefore the rejection of the claims as being obvious to one of skill in the art over Reynaud '372 in view of Alpert '929 should now be withdrawn. In the alternative, it is asserted that the combination of references does not render obvious the subject invention, as claimed.

The same patient-specific difference between the present invention and that of Alpert '929 is also true when comparing the present invention to that of Goldberg '012, which, according to Applicant, Robert Sicurelli, requires a two-step patient-specific process *"that optimizes the wetting of the fibers, while obviating the presence of voids, thereby enabling the incorporation of significantly higher amounts of fiber with concomitant increases in strength and other desired mechanical properties. Included in this object is the provision for the initial production of an effective composite material and the subsequent, (emphasis added) formation of the dental component from that material."* See Goldberg '012 at column 3, lines 55-66.

Additionally, Applicant's Rule 56 Information Disclosure Statement filed under Applicants' earlier parent patent application filed on December 24, 1998 under serial number 08/858,615, filed May 20, 1997, was allowed to issue as United States Patent 5,915,970 by Examiner Wilson herein. In that case,

Goldberg '012 was cited by Applicants in the Rule 56 Statement filed December 24, 1998, which argued that Goldberg's appliance is unique for each individual patient, unlike the subject matter of the present invention, which describes a *prefabricated* endodontic post system that essentially fits the canals of all teeth, from out of a box. In that Rule 56 Information Disclosure Statements Applicant also submitted for Examiner Wilson's consideration the PDR (Physician's Desk Reference, as well as the dental scholarly publications of Tylman (which described dental appliances, such as in Goldberg '012) and Charbeneau (which defined endodontic posts, such as the subject matter of Applicants herein).

As a result, one skilled in the art of endodontic dentistry would not look to patient specific appliances, as in Goldberg '012, as a source of materials for the non-analogous prefabricated posts of the Applicant's subject matter.

But, the examiner has here cited Goldberg '012 as rendering the present invention obvious, in combination with Reynaud, after allowing a parent application of the present invention to issue as U.S. Patent No. 5,915,970 ('970 Patent of the present inventor).

If there was insufficient reason to cite Goldberg '012 as a relevant ground of rejection for obviousness at the time of examination of the inventor's '970 issued U.S. Patent, then the Examiner is requested to point to a substantial new reason to cite the relevance of Goldberg '012 in the case of the present application currently under examination.

The Examiner could have articulated substantial new grounds of relevance of the Goldberg '012 reference at the time of preparing the present Office Action. According to the Examiner, Goldberg '012 has now become relevant. However, the Applicant asserts that to cite Goldberg '012 as a reference against the present invention is unsubstantiated, and therefore impermissible because bare conclusion does not constitute legal argument. Therefore, the examiner is respectfully asked to remove the reference to Goldberg '012.



**PRE-DATING OF ALPERT REFERENCE**

Concerning the Examiner's declining to drop Alpert '929 as a reference under 37 CFR 1.131(a), in the prior prosecution, there is an extensive discussion of the Alpert '929 reference and its possible availability as a reference, specifically with respect to the claims now pending in the subject application. Since the subject application relies on the filing date of September 27, 1993 of the parent application, which matured into U.S. patent No. 5,518,399, that patent's specification has been used as a basis for determining whether the structure described in connection with the fourth preferred embodiment, and which is set forth in the claims currently pending in the subject application, is entitled to the same interpretation as the structure described in the description of the first preferred embodiment. The Examiner has indicated it is not. The undersigned respectfully disagrees.

In the prior Response filed on November 1, 2006, the applicability of the language set forth in the parent Sicurelli patent, at Column 5, lines 42-57, to the discussion of the fourth embodiment, set forth at Column 7, starting at line 33 was asserted. That discussion will not be repeated here. The Examiner is however requested to review it. The essence of that discussion was that both embodiments refer to a "post reinforcing rod." Note the discussion of such a "post reinforcing rod" at Column 5, line 53 and at Column 7, line 35. As was cogently argued in the November 1, 2006 response, the applicant is entitled to be his own lexicographer. He is not required to define the same term each time that term is used in the specification. One such definition is sufficient.

In the parent Sicurelli patent, the applicable phrase recites that the "post reinforcing rod" is preferably formed from reinforced plastic such as fiberglass polyester composites similar to those used in the construction of fishing poles, flexible ceramic resin composites, graphites, teflons, polycarbonates and the like. Note Column 5, lines 53-57. One reading the description of the fourth embodiment of the port 100, as depicted in Figs. 8 and 9, as including a post

reinforcing rod would understand that phrase to be the same, in meaning, as the same phrase used at Column 5, lines 53-57.

In the prior Office Action of January 12, 2007, in his reference to applicant's arguments, the Examiner found them not to be persuasive. Specifically, the Examiner indicated that the embodiment shown in Fig. 8 was not entitled to rely on the language used to describe the embodiment of Figs. 1-3. The Examiner's position was that a "complete" teaching of the material used in the embodiment of Figs. 1-3 is "reinforced plastics such as fiberglass polyester composites similar to those used in the construction of fishing poles."

It is respectfully submitted that the Examiner's asserted "complete" reading is, in fact, not complete and that his conclusions are not correct. The language of the Sicurelli parent patent, at Column 3, lines 52-67 recited, in their entirety that *"Core spacer 20 and post reinforcing rod 30 are preferably formed from reinforced plastics such as fiberglass polyester composites similar to those used in the construction of fishing poles, flexible ceramic resin composites, graphites, teflons, polycarbonates and the like."* (Emphasis added). The use of a fishing pole is an example of the use of reinforced plastics, such as fiberglass polyester composites, as one kind of a plurality of reinforced plastics that could be used to form the post reinforcing rod 30 or the post reinforcing rod 130.

In Figs. 8 and 9, the post reinforcing rod 130 is formed from a bundle of reinforced plastic or other fibers cemented together. These are the same types of reinforced plastics or other fibers as are recited in connection with Figs. 1-3. These fibers are longitudinally arranged, similar to ones used in the construction of fishing poles. The fibers 101 depicted in Figs. 8 and 9 are also longitudinal strands.

The result of this analysis must be the conclusion that U.S. patent No. 5,564,929 to Alpert is not available as a reference with respect to the claims now pending in the subject application. Its filing date of August 17, 1994 is almost a year subsequent to the filing date of the Sicurelli parent application, from which the subject application claims priority. Withdrawal of the Alpert '929 reference in the rejection of the currently pending claims is respectfully requested.

Various ones of the dependent claims were rejected over Reynaud '372 in view of either Alpert '929 or Goldberg '012 in view of another one of several tertiary references. Each one of these tertiary references has been reviewed and was discussed in one of the prior Amendments or Responses. None of these references are believed to provide the features of the subject invention, as recited in amended independent Claims 33, 55, 77, 78 or 101. The claims now pending in this application are believed to be allowable over these additional references.

Applicants respectfully point out that the examiner has cited a multiplicity of references in this case, each with some feature purported by the examiner to render the present invention obvious, or do so in light of and in combination with the other references cited. Applicant further traverses the examiner's finding of obviousness on grounds that it is both unreasonable and impermissible to cobble together a multiplicity of references, as has been done here, in order to find obviousness. Applicants refer the examiner to the case of *In Re Blamer* (*In re Blamer*, No. 93-1108 (Fed. Cir. 09/21/1993)) standing for the proposition that subject matter cannot be obvious if a multitude of references is cited from which the examiner picks and chooses features, *id.* at paragraphs 19 – 20.

[19] The examiner concluded that applicant's invention would have been obvious in light of twelve references. The Board correctly stated that the examiner's reliance on so many references was "overkill" and concluded that applicant's invention would have been obvious in light of four of the references. We agree with the Board on the former statement, but disagree with the latter. What both the examiner and Board have done is to cite a number of references variously containing some of the limitations in applicant's claims. However, these references and the limitations for which they were cited were combined piecemeal without any suggestion or motivation for their combination and without regard to the purpose of applicant's invention.

[20] The law followed by this court is that "[a] prima facie case of obviousness is established when the teachings [of] the prior art itself would appear to have

suggested the claimed subject matter to a person of ordinary skill in the art." In re Rinehart, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976). See also In re Lalu, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1984) ("In determining whether a case of prima facie obviousness exists, it is necessary to ascertain whether the prior art teachings would appear to be sufficient to one of ordinary skill in the art to suggest making the claimed substitution or other modification.")  
In re Blamer, No. 93-1108 (Fed. Cir. 09/21/1993), at Paragraphs 19-20.

It is respectfully asserted that the examiner in the matter of the present Office Action herein responded to has engaged in impermissible Blamer-feature-selecting from multiple disparate references to conclude that, somehow, all the cited references add up to obviousness. Such a conclusion is precisely what the Federal Circuit overruled in the case of In re Blamer (id.). The Federal Circuit put it simply: "The law followed by this court is that "[a] prima facie case of obviousness is established when the teachings [of] the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art." In re Blamer, No. 93-1108 (Fed. Cir. 09/21/1993) at paragraph 20, citing In re Rinehart, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976). See also In re Lalu, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1984) ("In determining whether a case of prima facie obviousness exists, it is necessary to ascertain whether the prior art teachings would appear to be sufficient to one of ordinary skill in the art to suggest making the claimed substitution or other modification.").

Paraphrasing In Re Blamer at paragraph 20, Applicants respectfully assert that none of the art cited of record teaches anything sufficient to suggest the claimed subject matter to one of ordinary skill in the art (id. at Paragraph 20).

Applicants therefore argue and assert that the examiner should reconsider and remove all of the references cited, that this case is now in condition for allowance, and the Applicants pray the examiner will now pass this case on to issue as a patent.


**SUMMARY**

It is believed that all of the claims now pending in the subject application are patentable over the prior art cited and relied on, taken either singly or in combination for the reasons set forth above. It is again asserted that the Alpert patent is not available as a reference because of its filing date.

Allowance of the claims, and passage of the application to issue is respectfully requested.

Respectfully submitted,

Robert T. Sicurelli, Jr.  
Samuel Masyr  
Applicants



Alfred M. Walker  
Reg. No. 26,600  
Attorney for Applicants

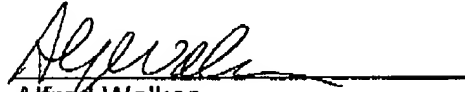
October 30, 2007

225 Old Country Road  
Melville, NY 11747  
(631)361-8737

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I hereby certify that this correspondence is being deposited by fax to 571-273-8300 on the date indicated below.

Date: October 30, 2007

  
Alfred Walker